



SEQUENCE LISTING

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Sun, Wei

<120> T Cell Receptor CDR3 Sequence and Methods for
Detecting and Treating Rheumatoid Arthritis

<130> D6622

<140> US 10/612,468
<141> 2003-07-02

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<220>
<221> CDS
<223> part of the complementary determining region-3 (CDR3)
in the V(16 family (BV16 gene) of T cell receptors
(TCR) in patients with rheumatoid arthritis (RA)

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<400> 1
agccaagctg acgggaccca t 21

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<221> CDS
<223> part of the complementary determining region-3
(CDR3) in the V(14 family (BV14 gene) of TCR in
patients with RA

<400> 2
agttccgggg gcagtctgtt c 21

<210> 3
<211> 7

<212> PRT
<213> *Homo sapiens*

<220>

<221> PEPTIDE

<223> conserved amino acid sequence derived from CDR3 of
TCR beta-chain BV16 in patients with RA

<400> 3

Ser Gln Ala Asp Gly Thr His
1 5

<210> 4

<211> 7

<212> PRT

<213> *Homo sapiens*

<220>

<221> PEPTIDE

<223> conserved amino acid sequence derived from CDR3 of
TCR beta-chain BV14 in patients with RA

<400> 4

Ser Ser Gly Gly Ser Leu Phe
1 5

<210> 5

<211> 4

<212> PRT

<213> *Homo sapiens*

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<223> amino acid sequence motif derived from CDR3 of TCR
beta-chain BV16 in patients with RA

<400> 5

Ser Trp Gly Gly
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<211> 113

<212> PRT

<213> *Homo sapiens*

<220>

<221> DOMAIN

<223> amino acid sequence of human (beta-chain variable
region V(14 of T cell receptors

<400> 6

Met	Gly	Pro	Gln	Leu	Leu	Gly	Tyr	Val	Val	Leu	Cys	Leu	Leu	Gly	
1				5					10					15	
Ala	Gly	Pro	Leu	Glu	Ala	Gln	Val	Thr	Gln	Asn	Pro	Arg	Tyr	Leu	
				20					25					30	
Ile	Thr	Val	Thr	Gly	Lys	Lys	Leu	Thr	Val	Thr	Cys	Ser	Gln	Asn	
				35					40					45	
Met	Asn	His	Glu	Tyr	Met	Ser	Trp	Tyr	Arg	Gln	Asp	Pro	Gly	Leu	
				50					55					60	
Gly	Leu	Arg	Gln	Ile	Tyr	Tyr	Ser	Met	Asn	Val	Glu	Val	Thr	Asp	
				65					70					75	
Lys	Gly	Asp	Val	Pro	Glu	Gly	Tyr	Lys	Val	Ser	Arg	Lys	Glu	Lys	
				80					85					90	
Arg	Asn	Phe	Pro	Leu	Ile	Leu	Glu	Ser	Pro	Ser	Pro	Asn	Gln	Thr	
				95					100					105	
Ser	Leu	Tyr	Phe	Cys	Ala	Ser	Ser								
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<210> 7

<211> 96

<212> PRT

<213> *Homo sapiens*

<220>

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<223> amino acid sequence of human (beta-chain variable
region V(16 of T cell receptors

<400> 7

Ile	Glu	Ala	Gly	Val	Thr	Gln	Phe	Pro	Ser	His	Ser	Val	Ile	Glu	
1				5					10					15	
Lys	Gly	Gln	Thr	Val	Thr	Leu	Arg	Cys	Asp	Pro	Ile	Ser	Gly	His	
				20					25					30	
Asp	Asn	Leu	Tyr	Trp	Tyr	Arg	Arg	Val	Met	Gly	Lys	Glu	Ile	Lys	
				35					40					45	
Phe	Leu	Leu	His	Phe	Val	Lys	Glu	Ser	Lys	Gln	Asp	Glu	Ser	Gly	
				50					55					60	
Met	Pro	Asn	Asn	Arg	Phe	Leu	Ala	Glu	Arg	Thr	Gly	Gly	Thr	Tyr	
				65					70					75	
Ser	Thr	Leu	Lys	Val	Gln	Pro	Ala	Glu	Leu	Glu	Asp	Ser	Gly	Val	
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Tyr	Phe	Cys	Ala	Ser	Ser										
				95											

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 <220>
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 PCR analysis

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 aagcacctga tcacagcaac t 21

 <210> 9
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 <220>
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 PCR analysis

 <400> 9
 tagttcagag tgcaagtcag g 21

 <210> 10
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 <220>
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 PCR analysis

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 ggttatctgt aagagtggaa cct 23

 <210> 11
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 <220>
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 PCR analysis

 <400> 11
 aggatgggca ctggtcactg t 21

<210> 12
 <211> 24
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 <220>
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 PCR analysis

 <400> 12
 tcgagatatc tagtcaaaag gacg 24

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 <220>
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 PCR analysis

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 <210> 14
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 PCR analysis

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 aagcagggat atctgtcaac gt 22

 <210> 15
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 <220>
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 PCR analysis

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<210> 16
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 gatcaaaaacg agaggacagc a 21

<210> 17
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<220>
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<400> 17
 agcaccaagg cgctcacatt ca 22

<210> 18
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<220>
 <223> forward primer specific for TCR BV6 used in real-time PCR analysis

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 ctcaggtgtg atccaatttc a 21

<210> 19
 <211> 21
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<220>
 <223> reverse primer specific for TCR BV6 used in real-time

PCR analysis

<400> 19
cccccgctct gtgcgctgga t 21

<210> 20
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> forward primer specific for TCR BV7 used in real-time
PCR analysis

<400> 20
catgggaatg acaaataaga agtct 25

<210> 21
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> reverse primer specific for TCR BV7 used in real-time
PCR analysis

<400> 21
tggctgcagg gcgtgtaggt g 21

<210> 22
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> forward primer specific for TCR BV8 used in real-time
PCR analysis

<400> 22
ccccgccatg aggtgacaga g 21

<210> 23
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
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 PCR analysis

<400> 23
 gagtccctgg gttctgaggg c 21

<210> 24
 <211> 21
 <212> DNA
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<220>
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 PCR analysis

<400> 24
 ccaaaataacc tggtcacaca g 21

<210> 25
 <211> 22
 <212> DNA
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<220>
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 PCR analysis

<400> 25
 ccaggaatt gatgtgaaga tt 22

<210> 26
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<220>
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 PCR analysis

<400> 26
 acctagactt ctggtcaaag ca 22

<210> 27
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<220>
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 PCR analysis

<400> 27
 ggactggatc tccaaggtac a 21

<210> 28
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<220>
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 PCR analysis

<400> 28
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<210> 29
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<220>
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 PCR analysis

<400> 29
 atgtgagggc ctggcagact c 21

<210> 30
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<220>
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 PCR analysis

<400> 30
 caagacacaa gatcacagag aca 23

<210> 31
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<220>

<223> reverse primer specific for TCR BV12 used in real-time PCR analysis

<400> 31
ggcagcagac tccagagtga g 21

<210> 32
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<223> forward primer specific for TCR BV13 used in real-time PCR analysis

<400> 32
tgaagacagg acagagcatg aca 23

<210> 33
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<212> DNA
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<220>

<223> reverse primer specific for TCR BV13 used in real-time PCR analysis

<400> 33
cacagatgtc tgggagggag c 21

<210> 34
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<223> forward primer specific for TCR BV14 used in real-time PCR analysis

<400> 34
acccaagata cctcatcaca gtg 23

<210> 35
<211> 21

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 <220>
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 PCR analysis

 <400> 35
 agaggtctgg ttggggctgg g 21

 <210> 36
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 <220>
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 PCR analysis

 <400> 36
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 <210> 37
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 <220>
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 PCR analysis

 <400> 37
 ggggatggca gactctaggg a 21

 <210> 38
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 <220>
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 PCR analysis

 <400> 38
 gttccccagc cacagcgtaa ta 22

<210> 39
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 <220>
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 PCR analysis

 <400> 39
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 <210> 40
 <211> 22
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 <220>
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 PCR analysis

 <400> 40
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 <210> 41
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 <220>
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 PCR analysis

 <400> 41
 agctgtcggg ttcttttggg c 21

 <210> 42
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 <220>
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 PCR analysis

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 agacacctgg tcaggaggag g 21

<210> 43
 <211> 21
 <212> DNA
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 <220>
 <223> reverse primer specific for TCR BV18 used in real-time
 PCR analysis

 <400> 43
 tgccgaatct cctcgacta c 21

 <210> 44
 <211> 24
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 <220>
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 PCR analysis

 <400> 44
 ccaggacatt tgggtcaaagg aaaa 24

 <210> 45
 <211> 21
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 <220>
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 PCR analysis

 <400> 45
 cagtgccgtg tctcccgggtt c 21

 <210> 46
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 <220>
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 PCR analysis

<400> 46
 gaccctggtg cagcctgtg 19

<210> 47
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<220>
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<400> 47
 gaggaggagc ttcttagaac t 21

<210> 48
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<220>
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<400> 48
 cccagatata agattacaga gaaa 24

<210> 49
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<220>
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<400> 49
 ctggatcttg agagtggagt c 21

<210> 50
 <211> 23
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<220>
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<400> 50
 cacagatggg acaggaagtg atc 23

<210> 51
 <211> 21
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<220>
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 PCR analysis

<400> 51
 gtcctccagc tttgtggacc g 21

<210> 52
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
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 PCR analysis

<400> 52
 aagagggaaa cagccactct g 21

<210> 53
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
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 time PCR analysis

<400> 53
 cagctccaag gagctcatgt t 21

<210> 54
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> forward primer specific for TCR BV24 used in real-time

PCR analysis

<400> 54
ccaagatacc aggttaccca gttt 24

<210> 55
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> reverse primer specific for TCR BV24 used in real-time
PCR analysis

<400> 55
caggcctggg gagcggtatgt c 21

<210> 56
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> forward primer specific for TCR BV25 used in real-time
PCR analysis

<400> 56
aaaacatctt gtcagagggg aa 22

<210> 57
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> reverse primer specific for TCR BV25 used in real-time
PCR analysis

<400> 57
tgaatcctca agcttcgtag c 21

<210> 58
<211> 19
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<220>
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 <400> 58
 cagcgccctt gtgttgatg 19

 <210> 59
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> reverse primer specific for TCR BC used in real-time PCR analysis

 <400> 59
 aagcgctggc aaaagaagaa 20

 <210> 60
 <211> 18
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> BC primer used for run-off reactions

 <400> 60
 cgacctcggg tgggaaca 18

 <210> 61
 <211> 19
 <212> DNA
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 <223> FAM (expand)-labeled BC primer used for run-off reactions

 <400> 61
 cacagcgacc tcgggtggg 19

 <210> 62
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 <212> DNA
 <213> Artificial Sequence

<220>
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 <400> 62
 actgtgagtc tgggtgccttg t 21

 <210> 63
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
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 acaacgggta acttgggtccc cgaa 24

 <210> 64
 <211> 24
 <212> DNA
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 <223> FAM (expand)-labeled BJ primer used for run-off reactions

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 ggtcctctac aacagtgagc caac 24

 <210> 65
 <211> 24
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 <400> 65
 aagagagaga gctggggtcc actg 24

 <210> 66
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 <212> DNA
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 <220>
 <223> FAM (expand)-labeled BJ primer used for run-off reactions

<400> 66
 ggagagtcga gttccatca 19

 <210> 67
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> FAM (expand)-labeled BJ primer used for run-off reactions

 <400> 67
 tgtcacagtg agcctgggtcc catt 24

 <210> 68
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> FAM (expand)-labeled BJ primer used for run-off reactions

 <400> 68
 cctggcccga agaactgctc a 21

 <210> 69
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 <212> DNA
 <213> Artificial Sequence

 <220>
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 <400> 69
 gtcctccagt acgctcagcc taga 24

 <210> 70
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> FAM (expand)-labeled BJ primer used for run-off reactions

 <400> 70
 tgcctgggcc aaaatactgc g 21

<210> 71
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> FAM (expand)-labeled BJ primer used for run-off reactions

 <400> 71
 tccccgcgcc gaagtactga a 21

 <210> 72
 <211> 18
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> FAM (expand)-labeled BJ primer used for run-off reactions

 <400> 72
 tcgagcacca ggagccgc 18

 <210> 73
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> FAM (expand)-labeled BJ primer used for run-off reactions

 <400> 73
 ctgctgccgg ccccgaaagt c 21

 <210> 74
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> FAM (expand)-labeled BJ primer used for run-off reactions

 <400> 74
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 <210> 75
 <211> 20
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<213> *Homo sapiens*

<220>

<221> DOMAIN

<223> CDR3 amino acid sequence of BV16 clonotype derived
from ST specimen of RA patients

<400> 75

Tyr	Phe	Cys	Ala	Ser	Ser	Gln	Asp	Ser	Gly	Gly	Gly	Gly	Glu	Gln
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Phe	Phe	Gly	Pro	Gly										
				20										

<210> 76

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<223> CDR3 nucleic acid sequence of BV16 clonotype derived
from ST specimen of RA patients

<400> 76

tatttctgtg	ccagcagcca	agatagcggg	gggggaggtg	agcagttctt	50
cgggccagga					60

<210> 77

<211> 20

<212> PRT

<213> *Homo sapiens*

<220>

<221> DOMAIN

<223> CDR3 amino acid sequence of BV16 clonotype derived
from ST specimen of RA patients

<400> 77

Tyr	Phe	Cys	Ala	Ser	Ser	Arg	Leu	Gly	Gln	Gly	Tyr	Asn	Glu	Gln
1				5				10						15
Phe	Phe	Gly	Pro	Gly										
				20										

<210> 78

<211> 60

<212> DNA

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<220>
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<223> CDR3 nucleic acid sequence of BV16 clonotype derived
from ST specimen of RA patients

<400> 78
tatttctgtg ccagcagccg actgggacag ggctacaatg agcagttctt 50
cgggccagga 60

<210> 79
<211> 20
<212> PRT
<213> *Homo sapiens*

<220>
<221> DOMAIN
<223> CDR3 amino acid sequence of BV16 clonotype derived
from ST specimen of RA patient

<400> 79
Tyr Phe Cys Ala Ser Ser Gln Asp Leu Asp Ser Tyr Asn Glu Gln
1 5 10 15
Phe Phe Gly Pro Gly
20

<210> 80
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
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<223> CDR3 nucleic acid sequence of BV16 clonotype derived
from ST specimen of RA patients

<400> 80
tatttctgtg ccagcagcca agatctggac agctacaatg agcagttctt 50
cgggccagga 60

<210> 81
<211> 20
<212> PRT
<213> *Homo sapiens*

<220>
<221> DOMAIN

<223> CDR3 amino acid sequence of BV16 clonotype derived
from ST specimen of RA patient

<400> 81

Tyr	Phe	Cys	Ala	Ser	Ser	Gln	Gly	Thr	Ser	Gly	Ile	Thr	Glu	Gln
1				5					10					15
Phe	Phe	Gly	Pro	Gly										
				20										

<210> 82

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<223> CDR3 nucleic acid sequence of BV16 clonotype derived
from ST specimen of RA patients

<400> 82

tatttctgtg	ccagcagcca	ggggactagc	gggatcactg	agcagttctt	50
cgggccagga					60

<210> 83

<211> 20

<212> PRT

<213> *Homo sapiens*

<220>

<221> DOMAIN

<223> CDR3 amino acid sequence of BV16 clonotype derived
from ST specimen of RA patient

<400> 83

Tyr	Phe	Cys	Ala	Ser	Ser	Gln	Leu	Ala	Gly	Pro	Tyr	Asn	Glu	Gln
1				5					10					15
Phe	Phe	Gly	Pro	Gly										
				20										

<210> 84

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<223> CDR3 nucleic acid sequence of BV16 clonotype derived from ST specimen of RA patients

<400> 84
tatttctgtg ccagcagcca gctagcggga ccctacaatg agcagttctt 50
cgggccagga 60

<210> 85

<211> 20

<212> PRT

<213> *Homo sapiens*

<220>

<221> DOMAIN

<223> CDR3 amino acid sequence of BV16 clonotype derived from ST specimen of RA patient

<400> 85
Tyr Phe Cys Ala Ser Ser Leu Leu Gly Thr Val Ser Tyr Glu Gln
1 5 10 15
Phe Phe Gly Pro Gly
20

<210> 86

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<223> CDR3 nucleic acid sequence of BV16 clonotype derived from ST specimen of RA patients

<400> 86
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cgggccaggc 60

<210> 87

<211> 20

<212> PRT

<213> *Homo sapiens*

<220>

<221> DOMAIN

<223> CDR3 amino acid sequence of BV16 clonotype derived from ST specimen of RA patient

<400> 87
 Tyr Phe Cys Ala Ser Pro Leu Gly Thr Ala Leu Ser Tyr Glu Gln
 1 5 10 15
 Phe Phe Gly Pro Gly
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<210> 88
 <211> 60
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV16 clonotype derived
 from ST specimen of RA patients

<400> 88
 tattttctgtg ccagccccct tgggacagcg ctatcctacg agcagtactt 50
 cgggcccgggc 60

<210> 89
 <211> 20
 <212> PRT
 <213> *Homo sapiens*

<220>
 <221> DOMAIN
 <223> CDR3 amino acid sequence of BV16 clonotype derived
 from ST specimen of RA patient

<400> 89
 Tyr Phe Cys Ala Ser Ser Gln Ala Asp Gly Thr His Tyr Glu Gln
 1 5 10 15
 Phe Phe Gly Pro Gly
 20

<210> 90
 <211> 60
 <212> DNA
 <213> Artificial Sequence

<220>
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 <223> CDR3 nucleic acid sequence of BV16 clonotype derived
 from ST specimen of RA patients

<400> 90
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cgggccgggc 60

<210> 91
<211> 20
<212> PRT
<213> *Homo sapiens*

<220>
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<223> CDR3 amino acid sequence of BV16 clonotype derived
from ST specimen of RA patient

<400> 91
Tyr Phe Cys Ala Ser Ser Gln Asp Lys Gly His Phe Tyr Glu Gln
1 5 10 15
Phe Phe Gly Pro Gly
20

<210> 92
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
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from ST specimen of RA patients

<400> 92
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cgggccgggc 60

<210> 93
<211> 20
<212> PRT
<213> *Homo sapiens*

<220>
<221> DOMAIN
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from ST specimen of RA patient

<400> 93
Tyr Phe Cys Ala Ser Ser Gln Ala Asp Gly Thr His Tyr Glu Gln
5 10 15

Phe Phe Gly Pro Gly
20

<210> 94

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<223> CDR3 nucleic acid sequence of BV16 clonotype derived
from ST specimen of RA patients

<400> 94

tatttctgtg ccagcagcca agctgacggg acccattacg agcagtactt 50
cgggccgggc 60

<210> 95

<211> 20

<212> PRT

<213> *Homo sapiens*

<220>

<221> DOMAIN

<223> CDR3 amino acid sequence of BV16 clonotype derived
from ST specimen of RA patient

<400> 95

Tyr Phe Cys Ala Ser Ser Trp Gly Gly Thr Asp Ile Tyr Glu Gln
5 10 15
Phe Phe Gly Pro Gly
20

<210> 96

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<223> CDR3 nucleic acid sequence of BV16 clonotype derived
from ST specimen of RA patients

<400> 96

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cgggccgggc 60

<210> 97
 <211> 20
 <212> PRT
 <213> *Homo sapiens*

 <220>
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 from ST specimen of RA patient

 <400> 97
 Tyr Phe Cys Ala Ser Ser Leu Leu Gly Thr Val Ser Tyr Glu Gln
 1 5 10 15
 Phe Phe Gly Pro Gly
 20

 <210> 98
 <211> 60
 <212> DNA
 <213> Artificial Sequence

 <220>
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 from ST specimen of RA patients

 <400> 98
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 cgggccgggc 60

 <210> 99
 <211> 18
 <212> PRT
 <213> *Homo sapiens*

 <220>
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 from ST specimen of RA patient

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 1 5 10 15
 Gly Gln Gly

 <210> 100
 <211> 54

<212> DNA
 <213> Artificial Sequence

<220>
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 <223> CDR3 nucleic acid sequence of BV16 clonotype derived
 from ST specimen of RA patients

<400> 100
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 aggc 54

<210> 101
 <211> 18
 <212> PRT
 <213> *Homo sapiens*

<220>
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 <223> CDR3 amino acid sequence of BV16 clonotype derived
 from ST specimen of RA patient

<400> 101
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 1 5 10 15
 Gly Gln Gly

<210> 102
 <211> 54
 <212> DNA
 <213> Artificial Sequence

<220>
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 <223> CDR3 nucleic acid sequence of BV16 clonotype derived
 from ST specimen of RA patients

<400> 102
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 aggc 54

<210> 103
 <211> 18
 <212> PRT
 <213> *Homo sapiens*

<220>
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 <223> CDR3 amino acid sequence of BV16 clonotype derived
 from ST specimen of RA patient

 <400> 103
 Tyr Phe Cys Ala Ser Arg Ala Ser Arg Tyr Thr Glu Ala Phe Phe
 1 5 10 15
 Gly Gln Gly

 <210> 104
 <211> 54
 <212> DNA
 <213> Artificial Sequence

 <220>
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 <223> CDR3 nucleic acid sequence of BV16 clonotype derived
 from ST specimen of RA patients

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 aggc 54

 <210> 105
 <211> 18
 <212> PRT
 <213> *Homo sapiens*

 <220>
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 from ST specimen of RA patient

 <400> 105
 Tyr Phe Cys Ala Ser Ser Thr Gly Val Asn Thr Glu Ala Phe Phe
 1 5 10 15
 Gly Gln Gly

 <210> 106
 <211> 54
 <212> DNA
 <213> Artificial Sequence

 <220>
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 <223> CDR3 nucleic acid sequence of BV16 clonotype derived

from ST specimen of RA patients

<400> 106
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aggc 54

<210> 107
<211> 18
<212> PRT
<213> *Homo sapiens*

<220>
<221> DOMAIN
<223> CDR3 amino acid sequence of BV16 clonotype derived
from ST specimen of RA patient

<400> 107
Tyr Phe Cys Ala Ser Ser Leu Thr Thr Asn Thr Glu Ala Phe Phe
1 5 10 15
Gly Gln Gly

<210> 108
<211> 54
<212> DNA
<213> Artificial Sequence

<220>
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from ST specimen of RA patients

<400> 108
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aggc 54

<210> 109
<211> 18
<212> PRT
<213> *Homo sapiens*

<220>
<221> DOMAIN
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from ST specimen of RA patient

<400> 109
 Tyr Phe Cys Ala Ser Ser Gln Asp Ser Tyr Thr Glu Ala Phe Phe
 1 5 10 15
 Gly Gln Gly

<210> 110
 <211> 54
 <212> DNA
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 from ST specimen of RA patients

<400> 110
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 aggc 54

<210> 111
 <211> 18
 <212> PRT
 <213> *Homo sapiens*

<220>
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 <223> CDR3 amino acid sequence of BV16 clonotype derived
 from ST specimen of RA patient

<400> 111
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 1 5 10 15
 Gly Gln Gly

<210> 112
 <211> 54
 <212> DNA
 <213> Artificial Sequence

<220>
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 <223> CDR3 nucleic acid sequence of BV16 clonotype derived
 from ST specimen of RA patients

<400> 112
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 aggc 54

<210> 113
<211> 20
<212> PRT
<213> *Homo sapiens*

<220>
<221> DOMAIN
<223> CDR3 amino acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 113
Tyr Phe Cys Ala Ser Ser Pro Thr Arg Asp Arg Gly Asn Glu Gln
1 5 10 15
Phe Phe Gly Pro Gly
20

<210> 114
<211> 63
<212> DNA
<213> Artificial Sequence

<220>
<221> CDS
<223> CDR3 nucleic acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 114
tacttctgtg ccagcagtcc cacgcgggac aggggaaata atgagcagtt 50
cttcgggccca gga 63

<210> 115
<211> 22
<212> PRT
<213> *Homo sapiens*

<220>
<221> DOMAIN
<223> CDR3 amino acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 115
Tyr Phe Cys Ala Ser Ser Ser Pro Ile Ala Gly Ser Ser Tyr Asn
1 5 10 15
Glu Gln Phe Phe Gly Pro Gly
20

<210> 116
 <211> 63
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

 <400> 116
 tactttctgtg ccagcagttc cccaatagcg gggagctcca atgagcagtt 50
 cttcgggcca gga 63

 <210> 117
 <211> 20
 <212> PRT
 <213> *Homo sapiens*

 <220>
 <221> DOMAIN
 <223> CDR3 amino acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

 <400> 117
 Tyr Phe Cys Ala Ser Ser Phe Trp Ala Pro Thr Asp Asn Glu Gln
 1 5 10 15
 Phe Phe Gly Pro Gly
 20

 <210> 118
 <211> 63
 <212> DNA
 <213> Artificial Sequence

 <220>
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 <223> CDR3 nucleic acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

 <400> 118
 tactttctgtg ccagcagttt ctgggcccct acggacaata atgagcagtt 50
 cttcgggcca gga 63

 <210> 119
 <211> 21
 <212> PRT

<213> *Homo sapiens*

<220>

<221> DOMAIN

<223> CDR3 amino acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 119

Tyr	Phe	Cys	Ala	Ser	Ser	Ser	Ser	Ser	Pro	Thr	Ser	Tyr	Asn	Glu
1				5					10				15	
Gln	Phe	Phe	Gly	Pro	Gly									
				20										

<210> 120

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<223> CDR3 nucleic acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 120

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cgggccagga					60

<210> 121

<211> 20

<212> PRT

<213> *Homo sapiens*

<220>

<221> DOMAIN

<223> CDR3 amino acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 121

Tyr	Phe	Cys	Ala	Ser	Ser	Pro	Arg	Glu	Gly	Leu	Leu	Asn	Glu	Gln
1				5				10					15	
Phe	Phe	Gly	Pro	Gly										
				20										

<210> 122

<211> 63

<212> DNA

<213> Artificial Sequence

<220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 122
 tactttctgtg ccagcagccc tagggagggc ctctcaata atgagcagtt 50
 cttcgggcca gga 63

<210> 123
 <211> 21
 <212> PRT
 <213> *Homo sapiens*

<220>
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 <223> CDR3 amino acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 123
 Tyr Phe Cys Ala Ser Ser Pro Trp Thr Ser Gly Ser Gly Asn Glu
 1 5 10 15
 Gln Phe Phe Gly Pro Gly
 20

<210> 124
 <211> 60
 <212> DNA
 <213> Artificial Sequence

<220>
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 <223> CDR3 nucleic acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 124
 tactttctgtg ccagcagtcct ctggactagc gggagtgggtg agcagttctt 50
 cgggccagga 60

<210> 125
 <211> 19
 <212> PRT
 <213> *Homo sapiens*

<220>
 <221> DOMAIN
 <223> CDR3 amino acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 125
 Tyr Phe Cys Ala Ser Ser Leu Arg Thr Arg Phe Tyr Glu Gln Tyr
 1 5 10 15
 Phe Gly Pro Gly

<210> 126
 <211> 57
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 126
 tacttctgtg ccagcagttt aaggacacgc ttctacgagc agttcttcgg 50
 gccagga 57

<210> 127
 <211> 20
 <212> PRT
 <213> *Homo sapiens*

<220>
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 <223> CDR3 amino acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 127
 Tyr Phe Cys Ala Ser Ser Leu Thr Ser Gly Arg Gln Tyr Glu Gln
 1 5 10 15
 Tyr Phe Gly Pro Gly
 20

<210> 128
 <211> 60
 <212> DNA
 <213> Artificial Sequence

<220>
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<223> CDR3 nucleic acid sequence of BV14 clonotype derived from ST specimen of RA patients

<400> 128

tacttctgtg ccagcagttt gaccagcggg cgtcagtagc agcagttctt 50
cgggccagga 60

<210> 129

<211> 20

<212> PRT

<213> *Homo sapiens*

<220>

<221> DOMAIN

<223> CDR3 amino acid sequence of BV14 clonotype derived from ST specimen of RA patients

<400> 129

Tyr	Phe	Cys	Ala	Ser	Ser	Ser	Gly	Gly	Ser	Leu	Phe	Tyr	Glu	Gln
1				5					10					15
Tyr	Phe	Gly	Pro	Gly										
				20										

<210> 130

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

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<223> CDR3 nucleic acid sequence of BV14 clonotype derived from ST specimen of RA patients

<400> 130

tacttctgtg ccagcagttc cgggggcagt ctgttctacg agcagttctt 50
cgggccagga 60

<210> 131

<211> 20

<212> PRT

<213> *Homo sapiens*

<220>

<221> DOMAIN

<223> CDR3 amino acid sequence of BV14 clonotype derived from ST specimen of RA patients

<400> 131
 Tyr Phe Cys Ala Ser Ser Leu Ser Val Gly Ala Thr Tyr Glu Gln
 1 5 10 15
 Tyr Phe Gly Pro Gly
 20

<210> 132
 <211> 60
 <212> DNA
 <213> Artificial Sequence

<220>
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 from ST specimen of RA patients

<400> 132
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 cgggccagga 60

<210> 133
 <211> 20
 <212> PRT
 <213> *Homo sapiens*

<220>
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 from ST specimen of RA patients

<400> 133
 Tyr Phe Cys Ala Ser Ser Ser Gly Gly Ser Leu Phe Tyr Glu Gln
 1 5 10 15
 Tyr Phe Gly Pro Gly
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<210> 134
 <211> 60
 <212> DNA
 <213> Artificial Sequence

<220>
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 from ST specimen of RA patients

<400> 134
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 cggggccagga 60

<210> 135
 <211> 20
 <212> PRT
 <213> *Homo sapiens*

<220>
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 from ST specimen of RA patients

<400> 135
 Tyr Phe Cys Ala Ser Ser Pro Ser Ile Ser Ser His Tyr Glu Gln
 1 5 10 15
 Tyr Phe Gly Pro Gly
 20

<210> 136
 <211> 60
 <212> DNA
 <213> Artificial Sequence

<220>
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 <223> CDR3 nucleic acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 136
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 cggggccagga 60

<210> 137
 <211> 19
 <212> PRT
 <213> *Homo sapiens*

<220>
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 <223> CDR3 amino acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 137
 Tyr Phe Cs Ala Ser Ser Arg Asp Gly Val Ser Tyr Glu Gln Tyr
 1 5 10 15
 Phe Gly Pro Gly

<210> 138
 <211> 57
 <212> DNA
 <213> Artificial Sequence

<220>
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 <223> CDR3 nucleic acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 138
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 gccagga 57

<210> 139
 <211> 19
 <212> PRT
 <213> *Homo sapiens*

<220>
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 from ST specimen of RA patients

<400> 139
 Tyr Phe Cys Ala Ser Ser Leu Ser Ser Thr Gly Arg Glu Gln Tyr
 1 5 10 15
 Phe Gly Pro Gly

<210> 140
 <211> 57
 <212> DNA
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 from ST specimen of RA patients

<400> 140
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 gccgggc 57

<210> 141
<211> 20
<212> PRT
<213> *Homo sapiens*

<220>
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<223> CDR3 amino acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 141
Tyr Phe Cys Ala Ser Ser Leu Ser Phe Arg Leu Asp Tyr Glu Gln
1 5 10 15
Tyr Phe Gly Pro Gly
20

<210> 142
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
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<223> CDR3 nucleic acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 142
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cgggccagga 60

<210> 143
<211> 20
<212> PRT
<213> *Homo sapiens*

<220>
<221> DOMAIN
<223> CDR3 amino acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 143
Tyr Phe Cys Ala Ser Ser Pro Ser Gly Gln Gly Ser Tyr Glu Gln
1 5 10 15
Tyr Phe Gly Pro Gly
20

<210> 144
 <211> 60
 <212> DNA
 <213> Artificial Sequence

 <220>
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 <223> CDR3 nucleic acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

 <400> 144
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 cgggccagga 60

 <210> 145
 <211> 20
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 <213> *Homo sapiens*

 <220>
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 from ST specimen of RA patients

 <400> 145
 Tyr Phe Cys Ala Ser Ser Phe Gly Thr Val Leu Ser Tyr Glu Gln
 1 5 10 15
 Tyr Phe Gly Pro Gly
 20

 <210> 146
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 <212> DNA
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 from ST specimen of RA patients

 <400> 146
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 cgggccagga 60

 <210> 147
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<213> *Homo sapiens*

<220>

<221> DOMAIN

<223> CDR3 amino acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 147

Tyr	Phe	Cys	Ala	Ser	Ser	Pro	Arg	Leu	Ala	Gly	Asp	Lys	Glu	Gln
1				5				10					15	
Tyr	Phe	Gly	Pro	Gly										
				20										

<210> 148

<211> 61

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<223> CDR3 nucleic acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 148

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tcgggccggg	c				61

<210> 149

<211> 20

<212> PRT

<213> *Homo sapiens*

<220>

<221> DOMAIN

<223> CDR3 amino acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 149

Tyr	Phe	Cys	Ala	Ser	Ser	Leu	Ser	Ala	Arg	Thr	Thr	Tyr	Glu	Gln
1				5				10					15	
Tyr	Phe	Gly	Pro	Gly										
				20										

<210> 150

<211> 60

<212> DNA

<213> Artificial Sequence

<220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 150
 tactttctgtg ccagcagttt aagtgccagg acaacctacg agcagttctt 50
 cgggccagga 60

<210> 151
 <211> 19
 <212> PRT
 <213> *Homo sapiens*

<220>
 <221> DOMAIN
 <223> CDR3 amino acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 151
 Tyr Phe Cys Ala Ser Ser Leu Ile Gly Gly Asn Glu Lys Leu Phe
 1 5 10 15
 Leu Gly Ser Gly

<210> 152
 <211> 57
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 152
 tactttctgtg ccagcagttt gataggggggc aatgaaaaac tgtttttttgg 50
 cagtgga 57

<210> 153
 <211> 18
 <212> PRT
 <213> *Homo sapiens*

<220>
 <221> DOMAIN
 <223> CDR3 amino acid sequence of BV14 clonotype derived

from ST specimen of RA patients

<400> 153

Tyr Phe Cys Ala Ser Ser Leu Ser Gln Glu Thr Glu Ala Phe Phe
1 5 10 15
Gly Gln Gly

<210> 154

<211> 53

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<223> CDR3 nucleic acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 154

tactttctgtg ccagagttaa tcccaggaaa ctgaagcttt ctttggacaa 50
ggc 53

<210> 155

<211> 19

<212> PRT

<213> *Homo sapiens*

<220>

<221> DOMAIN

<223> CDR3 amino acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 155

Tyr Phe Cys Ala Ser Arg Ala Gly Thr Gly Phe Glu Lys Leu Phe
1 5 10 15
Phe Gly Ser Gly

<210> 156

<211> 54

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<223> CDR3 nucleic acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 156
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tgga 54

<210> 157
<211> 18
<212> PRT
<213> *Homo sapiens*

<220>
<221> DOMAIN
<223> CDR3 amino acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 157
Tyr Phe Cys Ala Ser Ser Leu Ser Gln Asn Thr Glu Ala Phe Phe
1 5 10 15
Gly Gln Gly

<210> 158
<211> 54
<212> DNA
<213> Artificial Sequence

<220>
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<223> CDR3 nucleic acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 158
tactttctgtg ccagcagtct gtcacagaac actgaagctt tctttggaca 50
aggc 54

<210> 159
<211> 18
<212> PRT
<213> *Homo sapiens*

<220>
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from ST specimen of RA patients

<400> 159
Tyr Phe Cys Ala Ser Ser Pro Arg Val Asn Thr Glu Ala Phe Phe
1 5 10 15
Gly Gln Gly

<210> 160
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 <212> DNA
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 from ST specimen of RA patients

 <400> 160
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 ggc 53

 <210> 161
 <211> 18
 <212> PRT
 <213> *Homo sapiens*

 <220>
 <221> DOMAIN
 <223> CDR3 amino acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

 <400> 161
 Tyr Phe Cys Ala Ser Ser Leu Ser Gln Glu Thr Glu Ala Phe Phe
 1 5 10 15
 Gly Gln Gly

 <210> 162
 <211> 53
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

 <400> 162
 tactttctgtg ccagagttta tcccaggaaa ctgaagcttt ctttggacaa 50
 ggc 53

 <210> 163
 <211> 18
 <212> PRT

<213> *Homo sapiens*

<220>

<221> Domain

<223> CDR3 amino acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 163

Tyr	Phe	Cys	Ala	Ser	Ser	Leu	Gly	Arg	Asn	Thr	Glu	Ala	Phe	Phe
1				5				10					15	
Gly	Gln	Gly												

<210> 164

<211> 54

<212> DNA

<213> Artificial Sequence

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from ST specimen of RA patients

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 from ST specimen of RA patients

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